

## CHAPTER 1

### RISK MANAGEMENT

**1-1. GENERAL.** This chapter explains risk management as it applies to wheeled vehicle driver training. For more detailed risk management guidance, refer to FM 101-5, Appendix J.

**1-2. BACKGROUND.** Ground vehicle accidents cost the Army millions of dollars each year and significantly reduce mission capabilities. Leaders must develop techniques that will save resources. Because the Army must be prepared to operate worldwide, the training mission has become increasingly demanding and so have the risks inherent in that mission. This increase in risk requires leaders to balance mission needs with hazards involved and make wise risk decisions.

#### 1-3. DEFINITIONS.

a. **Risk Management.** Risk management is the process of identifying and controlling hazards to protect the force. It is a step-by-step process that provides a framework for analyzing any mission or task. The following are the five steps of risk management:

(1) **Step 1 – Identify Hazards.** Identify hazards to the force. Consider all aspects of current and future situation, environment, and known historical problem areas.

(2) **Step 2 – Assess Hazards.** Assess hazards to determine risks. Assess the impact of each hazard in terms of potential loss and cost based on probability and severity.

(3) **Step 3 – Develop Controls and Make Risk Decision.** Develop control measures that eliminate the hazards or reduce its risk. As control measures are developed, risks are reevaluated until all risks are reduced to a level where benefits outweigh potential cost.

(4) **Step 4 – Implement Controls.** Put controls in place that eliminate the hazards or reduce their risk.

(5) **Step 5 – Supervise and Evaluate.** Enforce standards and controls. Evaluate the effectiveness of control and adjust/update as necessary.

b. **Hazard.** Any real or potential condition that can cause injury, illness, or death of personnel; or damage to or loss of equipment or property.

c. **Risk.** Chance of hazard or bad consequences; exposure to chance of injury or loss. Risk level is expressed in terms of hazard probability and severity.

d. **Exposure.** The frequency and length of time subjected to a hazard.

e. **Probability.** The likelihood that an event will occur.

f. **Severity.** The expected consequence of an event in terms of degree of injury, property damage, or other mission impairing factors (loss of combat power, adverse publicity, and so forth) that could occur.

g. **Controls.** Actions taken to eliminate hazards or reduce their risk.

h. **Risk Assessment.** The identification and assessment of hazards (first two steps of risk management process).

i. **Residual Risk.** The level of risk remaining after controls have been identified and selected for hazards that may result in loss of combat power. Controls are identified and selected until residual risk is at an acceptable level or until it cannot be practically reduced further.

j. **Risk Decision.** The decision to accept or not accept the risk(s) associated with an action.

**1-4. RISK MANAGEMENT PROCESS.** The risk management process uses the following approach:

a. **Identify Hazards.** Look for hazards in each phase of the training or operation.

b. **Assess the Risk.** Ask these questions:

- What type of injury or equipment damage can be expected?
- What is the probability of an accident happening?

NOTE: A low probability of an accident and an expected minor injury equals low risk. A high probability of an accident and an expected fatality equals extremely high risk.

c. **Develop Risk Control Alternatives and Make Risk Decisions.** If you cannot eliminate the risk, then you must control it without sacrificing essential mission requirements. You can control some risks by modifying tasks, changing location, increasing supervision, wearing protective clothing, changing time of operation, and so on. Decisions take several forms:

- Selecting from available controls.
- Modifying the mission because risk is too great.
- Accepting risk because mission benefits outweigh potential loss.

d. **Implement Risk Control Measures.** You must integrate procedures to control risks into plans, orders, SOPs, and training. You must also ensure risk reduction measures are used during actual operations.

e. **Supervise the Operations.** Make sure leaders know what controls are in place, what standards are expected, and then hold those in charge accountable for implementation. This is the point when accident prevention actually happens.

**1-5. RISK ASSESSMENT ELEMENTS.** There are no hard and fast rules for assessing risk. Different training tasks involve different elements that can affect training safety. However, the following seven elements are central to safely completing most driver training tasks:

- Soldier qualification.
- Supervision.
- Vehicle type.
- Equipment.
- Weather.
- Time of day.
- Terrain.

Using matrices that assign a risk level to each of the elements is one way to quickly appreciate the overall risks. The following matrices (Tables 1-1 through 1-7) are examples of risk assessments for the seven elements common to driver training missions.

NOTE: The factors are arbitrarily weighted. Modify them based on your particular mission and unit.

- Measure soldier qualification risk (Table 1-1) by comparing the level of task difficulty to the soldier's military driving experience.

**Table 1-1. Soldier qualification risk value**

SOLDIER QUALIFICATION RISK VALUE			
DRIVING EXPERIENCE			
TASK	LICENSED OVER 1 YEAR	LICENSED UNDER 1 YEAR	UNLICENSED
COMPLEX	Moderate	High	High
ROUTINE	Low	Moderate	High
SIMPLE	Low	Low	Moderate

EXAMPLE: Unlicensed drivers learning braking techniques in a 5-ton cargo truck with air brakes would be a high risk situation requiring substantial controls (new drivers generally do not have experience with air brake vehicles).

- Measure vehicle type risk (Table 1-2) by comparing the vehicle configuration to the locations of the training tasks.

**Table 1-2. Vehicle type risk value**

VEHICLE TYPE RISK VALUE			
VEHICLE CONFIGURATION			
LOCATION OF TRAINING	SMALL TRUCKS	STRAIGHT TRUCKS	COMBINATION UNITS
ROAD	Moderate	High	High
TRAINING AREA	Low	Moderate	High
MOTOR POOL	Low	Low	Moderate

EXAMPLE: Driving a 5-ton cargo truck over the road would have a high risk value.

- Measure weather risk (Table 1-3) by comparing road conditions with visibility.

**Table 1-3. Weather risk value**

WEATHER RISK VALUE			
VISIBILITY			
ROAD CONDITIONS	CLEAR	REDUCED	RESTRICTED
UNFAVORABLE	Moderate	High	High
ADEQUATE	Low	Moderate	High
FAVORABLE	Low	Moderate	High

EXAMPLE: Driving on icy roads in fog would have a high risk value.

- Measure terrain risk (Table 1-4) by comparing the physical features of the land with the existing road network.

**Table 1-4. Terrain risk value**

TERRAIN RISK VALUE			
ROAD NETWORK			
TYPE OF TERRAIN	IMPROVED ROADS	SECONDARY ROADS	UNIMPROVED
MOUNTAIN	Moderate	High	High
DESERT/JUNGLE	Low	Moderate	High
FLAT/ROLLING	Low	Low	Moderate

EXAMPLE: Driver training conducted at Fort Bragg, NC, over trails would have a moderate risk value.

- Measure supervision risk (Table 1-5) by comparing the level of supervision to the task location.

**Table 1-5. Supervision risk value**

SUPERVISION RISK VALUE			
TASK LOCATION			
LEVEL OF SUPERVISION	MOTOR POOL	TRAINING AREA/ NONCONGESTED ROAD	OFF ROAD/ CONGESTED ROAD
NOT OBSERVING	High	High	High
OBSERVING	Low	Moderate	High
IN VEHICLE	Low	Low	Moderate

EXAMPLE: A student driving alone, but observed, in a training area would have a moderate risk value.

- Measure equipment risk (Table 1-6) by comparing the equipment's age to the time (months) since the last semiannual service. Equipment age is defined as; old is 15 or more years old, average is 5 to 15 years old, and new is 5 or less years old.

**Table 1-6. Equipment risk value**

EQUIPMENT RISK VALUE			
LAST SEMIANNUAL SERVICE			
EQUIPMENT AGE	0 TO 2 MONTHS	+2 TO 4 MONTHS	+4 MONTHS
OLD	Moderate	Moderate	High
AVERAGE	Low	Moderate	High
NEW	Low	Low	Moderate

EXAMPLE: An eight-year-old 5-ton cargo truck serviced 3 months ago would have a moderate risk value.

- Measure time of day risk (Table 1-7) by comparing the level of light to familiarity with the route.

**Table 1-7. Time of day risk value**

TIME OF DAY RISK VALUE			
LIGHT LEVEL			
ROUTE FAMILIARITY	DAY	DAWN/DUSK	NIGHT
NEVER DRIVEN ROUTE	Moderate	High	High
DRIVEN ROUTE	Low	Moderate	High
1 TO 3 TIMES FAMILIAR ROUTE	Low	Low	Moderate

EXAMPLE: A driving task over a familiar route that starts during the day but ends at dusk would have a moderate risk value.

After assessing all the risks, the overall risk value equals the highest risk identified for any one element. Now is the time to focus on high risk elements and develop controls to reduce risks to an acceptable level. Control examples may include conducting training in a different location or at a different time of day, putting an instructor in the vehicle with the student, waiting for better weather, using a different vehicle, and so on.

**1-6. DECISION AID.** The level of the decision maker should correspond to the level of the risk. The greater the risk, the more senior the final decision maker should be. The matrix shown in Table 1-8 is a proposed decision aid to help determine the leadership decision-making level.

**Table 1-8. Proposed decision aid**

DECISION AID	
RISK	DECISION LEVEL
LOW MODERATE HIGH	SENIOR INSTRUCTOR COMPANY COMMANDER BATTALION COMMANDER

a. Moderate risk training warrants complete unit command involvement. For example, a moderate risk value in the weather element category indicates the soldiers are more susceptible to cold injuries and require closer supervision or a rescheduling of training. If you cannot reduce the risk level, the company commander should decide to train or defer the mission.

b. Operations with a high risk value warrant battalion involvement. If you cannot reduce the risk level, the battalion commander should decide to train or defer the mission.

**1-7. RISK CONTROL ALTERNATIVES.** The following options can help control risk:

- Eliminate the hazard totally, if possible, or substitute a less hazardous alternative.
- Reduce the magnitude of the hazard by changing tasks, locations, times, and so forth.
- Modify operational procedures to reduce risk exposure consistent with mission needs.
- Train and motivate personnel to perform to standards to avoid hazards.

**1-8. SUPERVISION.** Leaders must monitor the training to ensure risk control measures are followed. Never underestimate subordinates ability to sidetrack a decision they do not understand or support. You must also monitor the impact of risk reduction procedures when they are implemented to see that they really work. This is especially true of new, untested procedures.

**1-9. PAYOFFS.** Risk management lets you use realistic training scenarios reducing personnel and equipment losses while training. Risk management is consistent with METT-T decision processes and can be used in battle to increase mission effectiveness.

**SAMPLE RISK ASSESSMENT WORK SHEET FOR DRIVER TRAINING**

**TRAINING TASK:** \_\_\_\_\_

**RISK LEVEL:** \_\_\_\_\_

\_\_\_\_\_1. SOLDIER QUALIFICATION

<b>SOLDIER QUALIFICATION RISK VALUE</b>			
<b>DRIVING EXPERIENCE</b>			
<b>TASK</b>	<b>LICENSED OVER 1 YEAR</b>	<b>LICENSED UNDER 1 YEAR</b>	<b>UNLICENSED</b>
<b>COMPLEX</b>	Moderate	High	High
<b>ROUTINE</b>	Low	Moderate	High
<b>SIMPLE</b>	Low	Low	Moderate

\_\_\_\_\_2. VEHICLE TYPE

<b>VEHICLE TYPE RISK VALUE</b>			
<b>VEHICLE CONFIGURATION</b>			
<b>LOCATION OF TRAINING</b>	<b>SMALL TRUCKS</b>	<b>STRAIGHT TRUCKS</b>	<b>COMBINATION UNITS</b>
<b>ROAD</b>	Moderate	High	High
<b>TRAINING AREA</b>	Low	Moderate	High
<b>MOTOR POOL</b>	Low	Low	Moderate

\_\_\_\_\_3. WEATHER

<b>WEATHER RISK VALUE</b>			
<b>VISIBILITY</b>			
<b>ROAD CONDITIONS</b>	<b>CLEAR</b>	<b>REDUCED</b>	<b>RESTRICTED</b>
<b>UNFAVORABLE</b>	Moderate	High	High
<b>ADEQUATE</b>	Low	Moderate	High
<b>FAVORABLE</b>	Low	Moderate	High



## 4. TERRAIN

TERRAIN RISK VALUE			
ROAD NETWORK			
TYPE OF TERRAIN	IMPROVED ROADS	SECONDARY ROADS	UNIMPROVED
MOUNTAIN	Moderate	High	High
DESERT/JUNGLE	Low	Moderate	High
FLAT/ROLLING	Low	Low	Moderate

## 5. SUPERVISION

SUPERVISION RISK VALUE			
TASK LOCATION			
LEVEL OF SUPERVISION	MOTOR POOL	TRAINING AREA/ NONCONGESTED ROAD	OFF ROAD/ CONGESTED ROAD
NOT OBSERVING	High	High	High
OBSERVING	Low	Moderate	High
IN VEHICLE	Low	Low	Moderate

## 6. EQUIPMENT

EQUIPMENT RISK VALUE			
LAST SEMIANNUAL SERVICE			
EQUIPMENT AGE	0 TO 2 MONTHS	+2 TO 4 MONTHS	+4 MONTHS
OLD	Moderate	Moderate	High
AVERAGE	Low	Moderate	High
NEW	Low	Low	Moderate

\_\_\_\_\_ 7. TIME OF DAY

TIME OF DAY RISK VALUE			
LIGHT LEVEL			
ROUTE FAMILIARITY	DAY	DAWN/DUSK	NIGHT
NEVER DRIVEN ROUTE	Moderate	High	High
DRIVEN ROUTE	Low	Moderate	High
1 TO 3 TIMES FAMILIAR ROUTE	Low	Low	Moderate

\_\_\_\_\_ OVERALL RISK LEVEL

DECISION AID	
RISK	DECISION LEVEL
LOW MODERATE HIGH	SENIOR INSTRUCTOR COMPANY COMMANDER BATTALION COMMANDER

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_